NEUROGENIC BLADDER

1) Anatomy & physiology of the bladder :-
   i) Bladder divided into -
   Detrusor - consists of smooth muscle.

   ii) Base - trigone & bladder neck, intimately connected to pelvic floor.

   3) Bladder outlet - two urethral sphincters
   Internal (smooth muscle) sphincter - bladder neck & proximal urethra.

   4) External (striated muscle) sphincter - membranous urethra.

   5) Capacity - 400 to 600 ml.

* Bladder function -
   i) Storage - at low pressure until it is convenient & socially acceptable to void.

   ii) Voiding - initiated by inhibition of the striated sphincter & pelvic floor, followed some sec. later by a contraction of the detrusor muscle.

* Neurogenic bladder :-
   Definition - Dysfunction of the urinary bladder due to disease of the central nervous system or peripheral nervous in the control of micturition.

* Types of neurogenic bladder :-
   1) ~~Uninhi~~ uninhibited.

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2) Reflex.
3) autonomus.
4) motor.
5) Sensory.

1) Uninhibited bladder (failure to store) -
1. loss of the cortical inhibition of reflex voiding. bladder tone & sensation remains normal,

2. Frequency, urgency, & incontinence (detruser hyperflexia).

3. urodynamic testing - normal bladder sensation & filling parameters, multiple unstable contractions.

* Causes :-
1. Stroke, brain tumour, NPH, dementia, Parkinsonism etc.

2) UMN / Reflex / automatic Neurogenic bladder :-
1. lesion above the level of the sacral bladder centre & below the level of the PMC.

2. loss of the normal inhibition from higher centers results in detrusor contraction during bladder filling (detrusor hyperactivity).

3. Detrusor sphincter dyssynergia (DSD) - obstructed voiding, incomplete emptying ↑ IV pressure → HDN, obst. uropathy.

* Symptoms - urgency, frequency, hesitancy, interrupted stream, urge incontinence (OSD + DH).

* Causes -
spinal cord injury, transverse myelitis, MS, ALS, Myelopathy etc.

3) Flaccid bladder :-
1) lesion in blw the bladder & spinal cord.
2) both afferent & efferent fibers are involved.
3) loss of sensation & voluntary control of bladder.
4) inability to initiate micturation.

overflow incontinence - & the residual urine develop.

Causes - cauda equina syndrome, conus medullaris spinal shock, extrinsic tumor compression, pelvic trauma, spina bifida etc.

* 4) Motor paralytic bladder -
1) motor nerve supply to the bladder is interrupted.
2) The bladder distends & decompensates, but sensation is normal.
3) residual urine is markedly ↑e.
4) The bulbocavernous & superficial anal reflex are usually absent but sacral & bladder sensation are present.

Causes -
1) lumbar spinal stenosis.
2) lumbosacral meningomyelocele.

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3) following radical hysterectomy or abdomino
urinal.
4) Resection.
5) herpes zoster infection.

* 5) Sensory Paralytic bladder :-
1. Sensory nv supply to the bladder is ~~in~~ interrupted.

2. lesions that involve the post. roots or post. ganglia of the sacral nerves, or the post. columns of the spinal cord.

3. distension, dribbling & difficulty both in ini micturition & in emptying the bladder.

4. painless urinary retention, overflow incontinence

5. Sensation is absent, & there is no desire to u can void voluntary (motor intact).

* Causes -
1) Tabes dorsalis.
2) diabetes.
3) syringomyelia.
4) pernicious anemia etc.

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